



NAVY DEPARTMENT

BUMED NEWS LETTER

a digest of timely information

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Isolation of Communicable Disease: In combating the spread of communicable diseases, the isolation of the case throughout the period of marked infectivity is of considerable importance. At best, however, this can be only partially accomplished, for the period of infectivity so often begins hours or days before symptoms sufficiently manifest themselves to make possible a diagnosis. Mild subclinical infections go undiagnosed, yet serve to spread infection to others. Obviously, with such initial gaps in isolation procedure, we can hope to gain but little by being hyper-meticulous in carrying out the latter part of the isolation process. The effort should be two-fold: (a) to prevent, as far as practicable, the spread of infection to others; (b) to keep the time lost by the case in isolation at a minimum.

With this double objective in mind, we should avoid on the one hand, such lax regulations as would permit German measles cases to carry on their regular duties and contacts in the obvious presence of rash and swollen post-cervical lymph nodes, and on the other hand, such strict regulations as would keep scarlet fever patients routinely under isolation for six weeks or more. A well balanced communicable disease control program will endeavor to isolate suspected cases promptly and freely; will release them just as promptly when observation shows the suspicion unfounded; and will extend the isolation only through the definitely and dangerously infective period.

Recommended isolation periods for the more common communicable diseases are as follows:

Measles - Communicable from the onset of the catarrhal symptoms (usually at least three days before the appearance of the rash), until the catarrhal symptoms have ceased (usually shortly after the return of the temperature to normal and well before the rash has completely disappeared). In a case without complications or abnormal discharges, release from isolation is usually safe any time after the fifth day following the appearance of the rash, provided the catarrhal symptoms have ceased.

Mumps - Communicable from 24 hours preceding the appearance of symptoms until the subsidence of all swelling in salivary glands or involved testicles. Release from isolation is usually safe 24 hours after all swellings of salivary glands or testicles have subsided. (It should be remembered, however, that with adult males the chance of orchitis persists for about one week after the subsidence of the parotitis.)

Rubella - Apparently communicable from 24 hours preceding the appearance of the rash until the subsidence of the rash. Release from isolation is usually safe 24 hours after the disappearance of the rash.

Scarlet fever. Streptococcic pharyngitis. Streptococcic tonsillitis - Most communicable in the first two weeks of the illness, communicable in the third week in approximately 25 per cent of cases, communicable in the fourth week in approximately five per cent of cases, communicable after the fourth week in approximately one per cent of cases. Release from isolation is usually safe 21 days after the onset of the disease, provided there are no complications or discharges. For another three weeks after release from isolation the patient should consider his nose and throat secretions still possibly dangerous to others. Desquamation has no relation to communicability.

Chickenpox - Infectious from 24 hours preceding the appearance of the eruption until there are no longer any actual pustules. Release from isolation is usually safe when all pustules are gone (usually about seven days from onset), and the patient has taken a thorough bath and shampoo. The dry scabs apparently bear no relation to communicability.

Meningococcus meningitis - Probably communicable throughout the course of the disease and until the meningococci have disappeared from the secretions of the nose and throat. Release from isolation is usually safe when 14 days have elapsed since the onset and the fever has subsided.

Poliomyelitis - Apparently communicable the last 1-2 days of the incubation period, and for the first 7-10 days of the disease (virus may be found in the stools even much later in the disease). Isolation is necessary only during the first 14 days following onset.

Smallpox - This disease is apparently the most communicable of all diseases. It is communicable from the inception of the first signs or symptoms until the complete disappearance of all crusts and scabs. There is some evidence that the disease is communicable in the last one or two days of the incubation period. Isolation in screened quarters, free from vermin, is necessary until recovery is complete and all crusts and scabs have disappeared.

Whooping cough - Communicable from the onset of the catarrhal stage and the first cough (usually about seven days after exposure), until the paroxysmal coughing has reached its maximum (usually about five weeks from onset). Most communicable in the early cough stage before whooping begins. Mild cases with little if any whooping probably not communicable after third week. Release from isolation is usually safe four weeks after the onset of the whooping stage or one week after the last coughing paroxysm that is accompanied by vomiting.

Diphtheria - Communicable from 24 hours before the onset of symptoms until the diphtheria bacilli have disappeared from the nose, throat or other site of infection. Isolation should be continued until symptoms and discharges have ceased and two successive nose and throat cultures, taken no less than 24 hours apart, are negative. (D.F.S.)

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Brucellosis (Malta Fever, Undulant Fever): Several articles on malta fever in Southwest Africa appear in the Deutsche tropenmedizinische Zeitschrift for April 15, 1941. They indicate that human cases of brucella abortus infection occurred in Rhodesia, derived from cattle, and that in the Orange Free State and the Union, brucella melitensis is spread from goats to man and also to sheep and cattle. It is estimated that from one-half to one-third of the sheep and goats in the kraals are infected. Hands should be cleansed after dealing with infected animals and with those which are slaughtered. All milk from cows and goats should be heated. (Bull. Hyg., London, May '43.)

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Brucellosis was reported as frequent in Chile and in Uruguay. In Uruguay, involvement of the male genitalia was found among 51 cases of brucellosis. The complication was epididymitis. (Purriel et al, Arch. urug. de med., cir. y especialid., Aug. '42.)

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V. San Martin Soto reports that the milk of 25 out of 400 cows in 60 cow-sheds in Santiago, Chile, yielded positive agglutination of Br. abortus. (Rev. chilena de hig. y med. prev., June '42.)

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Jordan, epidemiologist in the Iowa State Department of Health, states that during 1930-1941 there were reported in the 48 states of this country 29,594 cases of brucellosis, an average annual rate of 1.87 per 100,000 population.

The isolation of brucella from the blood stream is first among laboratory aids for confirmation of diagnosis. The presence of agglutination in diagnostic culture is second only to the blood culture as an aid in clinical diagnosis. A positive intradermal test with brucella antigen signifies exposure to brucella infection in the recent or remote past. Use of none but carefully pasteurized dairy products and enforcement of the Standard Milk Ordinance afford the best assurance against milk-borne disease. (Am. J. Pub. Health, July '43.)

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As a false positive agglutination reaction may be produced by the intradermal introduction of brucella antigen, it is advisable not to do the intradermal test until after blood has been obtained for agglutination reactions.

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Chronic Brucellosal Type of Ankylosing Spondylitis: "Of eighteen cases of ankylosing spondylitis, five can be listed as being caused by chronic brucellosis in this series. Ankylosing spondylitis is a symptom complex. The cause may be an infection which can be either determinable, as apparently the five cases quoted could be, or nondeterminable in our present stage of knowledge. Chronic brucellosis, like syphilis or tuberculosis, is protean in its manifestations. It may reveal itself in different ways. Apparently one of the complications of chronic brucellosis may be that of a rheumatoid type of arthritis, which when limited to the spine presents the symptom complex of ankylosing spondylitis." (Goldfain, J. Lab. & Clin. Med., July '43.)

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Traction Injuries to Peripheral Nerves are described by Highet and Holmes. Their report gives in detail eight cases of traction injury to the lateral popliteal nerve which were treated surgically. The lesions were examined histologically. Traction lesion is characterized by much more extensive damage to the nerve-trunk than is found after injury by incision, laceration or gunshot wound. Spontaneous recovery following traction injury did not take place even in cases in which nervous tissue was continuous throughout the lesion. In three cases end-to-end suture was performed after extensive resection of the lesion with closure of the gap by mobilization of the nerve and flexion of the knee. Recovery did not take place in these cases. It is concluded that failure of recovery even after extensive resection and suture may be due to injury inflicted on the nerve during postoperative extension of the joint. (Brit. J. Surg., Jan. '43.)

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Assignment of Medical Officers to Postgraduate Instruction: Until the acute shortage of medical officers in the Navy has been somewhat decreased by new appointments in the Medical Corps of the Naval Reserve, postgraduate instruction for regular and reserve medical officers, except in Aviation Medicine, Deep Diving, Parachute Jumping, and Neuropsychiatry, it is contemplated, may in the near future be reduced to a minimum.

The Bureau desires medical officers who are interested in postgraduate instruction in Neuropsychiatry to submit to the Bureau immediately their applications for this type of instruction, with comment by their commanding officers or senior medical officers.

The next class in Epidemiology will assemble at the Naval Medical School, National Naval Medical Center, Bethesda, Maryland, on 11 September. Nominations have been made for all medical officers for this class.

Hereafter, all medical officers, both regular and reserve, assigned to instruction at the Naval Air Station, Pensacola, Florida, will be ordered to temporary duty under instruction in Aviation Medicine. Upon completion of the course in Aviation Medicine a limited number will be selected for further instruction leading to the designation of Flight Surgeon. (W.J.C.A.)

Treatment of Early Syphilis: Eagle and Hogan in an article on "An Experimental Evaluation of Intensive Methods for the Treatment of Early Syphilis" summarize their findings as follows:

"1. In the various intensive schedules which have been used for the treatment of early syphilis in man, the dose of mapharsen which has 'cured' a satisfactory proportion of cases has been largely independent of the frequency of injection or the duration of treatment. This curative dose has been 20 to 30 mg. per kg., or approximately 1,500 mg. in a man weighing 60 kg. The relative constancy of the total curative dose is in accord with the animal data previously reported.

"2. The margin of safety provided by any intensive procedure is therefore primarily a function of its toxicity. That margin of safety, calculated from the animal data on toxicity, has varied from 3 to 10 in the treatment schedules which have been used in man. The observed incidence of toxic reactions and of deaths has been in complete accord with, and predictable from, this calculated margin. Thus, the administration of 1,200 mg. in a five-day intravenous drip, with a safety factor of 3.0, has resulted in a mortality of 1:200, and serious toxic reactions in one in every 100 patients treated. Standard weekly practice, with a safety factor of 10, has a mortality of less than 1:3,000; and treatment schedules with intermediate factors of safety have resulted in a correspondingly intermediate incidence of toxic reactions and deaths.

"3. It is estimated that a margin of safety of 6 to 8 is necessary to reduce the mortality of antisyphilitic treatment to less than 1:1,000. With the drugs and methods now available, no treatment schedule completed in 20 days or less meets that reasonable requirement, no matter how the injections are given. That margin of safety would, however, be provided by giving the total curative dose in triweekly injections for 7 weeks, daily injections for approximately 6 weeks, or multiple daily injections, or an intravenous drip for an estimated period of 4 to 6 weeks.

"4. The triweekly schedule has the important advantage of permitting treatment to be carried out on an ambulant basis in the average clinic. This method is now under study in 80 cooperating clinics. The size of the individual dose has been fixed at approximately 1 mg. per kg., with a maximum of 80 mg. and a minimum of 40 mg. The duration of treatment has been varied from 6 to 12 weeks. The minimum effective total dosage, the advisability of giving concurrent injections of bismuth, and the applicability of the procedure to the treatment of latent syphilis are some of the factors under consideration." (Ven. Dis. Inform., June '43.)

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Anti-Luetic Therapy in the Navy: Among forces afloat the 18 months treatment schedule of early syphilis is mainly in use. Under this schedule, patients will receive a minimum of three to four courses of mapharsen and three to four courses of bismuth. Dosages under this routine would be 1800 to 2400 mg. of mapharsen or 30 to 40 mg. per kg. in a man weighing 60 kg. (60 kg. used for comparative purposes).

Some are using, especially in shore establishments, the so-called twenty-six-week treatment schedule patterned after that in use in the Army. This treatment comprises 40 injections of mapharsen or a total dosage of approximately 2400 mg. or again, 40 mg. per kg. for a 60 kg. patient.

Both of these schedules equal or exceed the so-called curative dosage mentioned in paragraph one of the Eagle and Hogan summary and equal the minimal total dosage mentioned in paragraph four of that summary.

The twenty-six-week schedule often does not take into consideration the weight of the patient and this, from all indications, is important. Any patient weighing over 60 kg. (140.4 pounds) would receive less than a curative dosage of 1 mg. per kg. of body weight. Obviously, many patients whose weight is substantially greater than 60 kg. will, unless the mapharsen dosage is increased proportionately to their greater body weight, receive what is probably inadequate treatment.

The twenty-six-week schedule of anti-luetic therapy was discussed in a mimeographed letter sent to all venereal disease control officers on May 27, 1943. A summary of the information contained in that letter is given in the following paragraph. (W.H.S.)

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Twenty-six-week treatment of early and latent syphilis is recommended by the Subcommittee on Venereal Disease, National Research Council. This treatment consists of ten weeks of semiweekly injections of mapharsen followed by six weeks of bismuth and another ten weeks of semiweekly injections of mapharsen. During the first five weeks, also during the final five weeks of treatment, bismuth is given once weekly along with mapharsen.

Dosage of mapharsen should be approximately 1 mg. per kg. of body weight; minimum single dose, 50 mg. and maximum single dose, 70 mg.

Dosage of bismuth subsalicylate in oil is two-tenths Grams of the bismuth subsalicylate (NOT two-tenths Grams of the bismuth metal).

In early syphilis a serologic test should be done at the beginning and end of treatment and repeated at the end of the following three and six months periods. If negative at the end of treatment, the case is considered closed. If positive, the patient is referred for further study. In latent syphilis the case is closed when treatment is completed regardless of serological findings, since many of these cases are serologically irreversible. All cases should, of course, be checked periodically at yearly intervals for possible reappearance of clinical manifestations.

Spinal fluid examination should be performed in early syphilis at the end of treatment; in latent syphilis the spinal fluid examination should be performed before treatment is instituted as well as afterward.

Before the patient who has, or who has had syphilis is discharged from the service, the status of his syphilis should be completely evaluated. (W.H.S.)

Slow Union of Fractures: In a critical review entitled "Slow Union of Fractures," involving a study of 804 fractures of the shafts of the tibia and femur, Watson-Jones and Coltart conclude that uncomplicated fractures treated by simple manipulation and plaster are uniting as quickly today as in former years.

Delayed union results from interrupted immobilization, traction and distraction, infection, persistent angulation, too early weight-bearing and loss of blood supply to the fragments.

The greater use of skeletal traction accounts for recent increase in the frequency of slow union, particularly in fractures of the shaft of the tibia. The time required for union is trebled, or more than trebled, by distraction, even if it amounts only to $\frac{1}{4}$ " and even if it is corrected within a few days.

Early weight-bearing in plaster, in skeletal transfixion apparatus, or in a calliper splint, does not accelerate union; it delays it. Weight-bearing before the stage of clinical union is unwise. (Brit. J. Surg., Jan. '43.)

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A word of caution is found in the above item in regard to the use of skeletal transfixion apparatus for the purpose of weight-bearing before the stage of clinical union. (J.S.B.)

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A New Method of Skin Grafting: A modification of skin grafting technic utilizing sticky paper, pasting the spread cut graft to the gummed or sticky surface, then cutting the paper and grafts in various strips or squares, is reported by Gabarro, former Secretary of the Society of Surgeons of Catalonia, Spain. (Brit. M. J., June '43.)

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Blast Death: That blast death may be due to forcible jamming of the epiglottis down into the glottis is the speculation of Dr. F.C. Eve with regard to the explanation of cases of sudden death from blast injury in which no trauma sufficiently severe to account for death was evident. He speculates that the high pressure wave from the bomb compresses the chest forcing out some of the air. The subsequent inrush of air, he thinks, may force down the epiglottis and this effect may be reinforced by the low pressure wave of the blast which sucks the chest wall outward. The author cites cases of sudden death due to food or foreign bodies jammed in the glottis. These victims do not show cyanosis nor do those cases which Eve describes as blast death injuries. For prevention he advises a moderately tight inelastic belly bandage. For first-aid treatment the finger or a hooked instrument should be used to release the impacted epiglottis or the partial vacuum in the chest may be relieved by plunging a hollow needle into the trachea. Artificial respiration until then is futile. (Lancet, London, June 26, '43.)

Liquid plasma, properly prepared remains satisfactory after months of storage at room temperature. A statistical analysis of the first 1751 completed questionnaires on administrations of plasma prepared by the Plasma Department of the U.S. Naval Medical School has been completed. This plasma had been preserved in the liquid state at room temperature and distributed to continental naval medical activities. A summary of a recent report from the Naval Medical Research Institute, based on this analysis, follows:

The average time of preservation before administration was five months but in 545 administrations the plasma was over six months old.

The total number of untoward reactions reported was 72. In 52 of these at least two other administrations from the same pool were satisfactory. Inasmuch as no control was exercised over the actual administration of the plasma or over the intravenous set, aside from general printed instructions, it was felt that these 52 reactions were probably not "attributable" to the plasma. This left a reaction rate possibly "attributable" to the plasma of 1.1 per cent.

Two factors appeared to influence the reaction rate significantly, the hospital concerned and the age of preservation. Reaction rates from certain of the activities ran as high as from nine to 33 per cent. The longer the preservation the fewer were the reactions within the limits studied.

It was concluded that when normal human plasma is prepared by a closed system with scrupulously aseptic technic, and administered with suitable precautions, particularly with regard to filtration, it may be preserved in the liquid state at room temperature in the temperate zone for periods up to at least a year and administered to patients with safety and benefit.

It was recommended that administrations of properly prepared plasma preserved in the liquid state for more than a year be continued since no contraindication to such administrations have been revealed by this study or any other studies to date.

A similar statistical analysis is now under way on approximately 1500 reports of dried plasma administrations.

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It should be strongly emphasized that the plasma referred to in the above report was prepared with special sterile precautions and was cultured repeatedly. Unless such precautions are taken, it is very dangerous to attempt preservation in the liquid state. (E.L.L.)

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Salt and Water Requirements in Hot Climates: The war has made important the question of the salt and water requirements of troops in hot countries. The British Army Medical Department Bulletin states that in order to reduce heat casualties the men must be acclimatized and receive the necessary amount

of salt and water. Efficient work in hot climates depends on physiologic adaptation -- decrease in heat production and increase in sweating. When the body reaches a certain critical temperature, just below 102 F., work becomes inefficient and hyperthermia threatens. Acclimatization is marked by a progressively smaller rise in body temperature for performing a standard piece of work, until those completely acclimatized can work for long periods without rise to the critical level, provided the intake of salt and water is adequate. For troops going to the tropics a month or two of vigorous work in summer heat (about 80 F.) is a good preparation and should be continued during the voyage by exercises.

It has been found experimentally that men properly acclimatized and receiving an ample supply of water require 2 Gm. of salt per hour of work and 0.5 Gm. per hour of rest. Those in sedentary occupations require 12 Gm. daily; those working hard for eight hours daily require 24 Gm. The fresh ration scale in the Middle East, including culinary salt, is 17 to 20 Gm. daily; the canned ration, 22 to 25 Gm. These amounts are sufficient when the water intake does not exceed two gallons. Only when this is exceeded is an issue of extra salt necessary.

Adequate water is as important as salt in preventing the effects of heat. Under tropical conditions with a day temperature of 94 F. and a relative humidity of 80 to 85 per cent, the daily excretion of sweat in men on moderate work is 5 to 6 liters. In desert conditions, with a day temperature of 100 to 120 F. and a relative humidity of 25 to 30 per cent, one may excrete as much as 8 liters. For the former a fluid intake of at least 6.5 liters and for the latter up to 9 liters is necessary to maintain the water balance. Some of this intake can be obtained from the water content of food and from the oxidation of foodstuffs, but the daily intake of water should not be allowed to fall below the figures given. For hard work considerably more is required.

It is recommended that men should be encouraged to drink as much water as they want, and preferably more, whenever thirsty, as this increases efficiency and prevents heat symptoms. When extra salt is given it should not be consumed during work but at meals or in rest periods, especially at night. Tablets of 10 grains are supplied and one is to be taken with each pint of water. Taken alone they nauseate. (London Letter, J.A.M.A., July 24, '43.)

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German Report on Epidemic Hepatitis: Siede and Luz discuss in the Klinische Wochenschrift for January 23, 1943, the etiology of epidemic hepatitis. They say, "It has been possible with the aid of the chorio-allantoic method to cultivate from duodenal fluid a filterable, specific agent which destroys chicken embryos on the average after five days within eight passages. Its behavior marks it as belonging to the group of filterable viruses. The virus has been successfully demonstrated with some degree of regularity in hepatitis epidemica so that it is probably the cause of this disease." (Bull. Hyg., London, May '43.)

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Epidemic Jaundice in Tunisia: French investigators, G. Senevet, P. Moutier, H. Gros, L. Alcay, and R. Bourgarel, discuss epidemic jaundice in Tunisia in an article published in Archives de l'institut Pasteur d'Algerie. The epidemic in question occurred in three infantry battalions and one sergeants' mess in the winter of 1939-1940. The authors conclude that the infective agent is probably a virus present during the pre-icteric stage in the saliva, the upper respiratory passages, and in the blood. (Bull. Hyg., London, May '43.)

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Psychological Aspects of Chemical Warfare: "A review of the literature on chemical warfare reveals the great importance of the psychologic aspects in the disabilities that might be anticipated from its use today. As a psychological weapon of threat it has disrupting potentialities. Actual physical damage need not be greatly feared. Only 1.73 per cent of American soldiers exposed to it in World War I died from it. The immediate physical effect is painful, but rarely does permanent damage result.

"The psychiatric disabilities are far more common. These consist mainly of psychoneurotic reactions, chiefly anxiety-hysterical and hysterical reactions. Persistent vomiting, aphonia and blepharospasm are the most common hysterical aftermaths. Like any other of the war neuroses, these are amenable to psychiatric therapy, and the percentage of cases that can be rehabilitated is high. Psychoses rarely, if ever, occur. Adequate treatment methods have been devised. Every doctor should be acquainted with them, and should be armed with some psychiatric understanding of the emotional factors at work, and methods for handling them.

"If chemical warfare is to be divested of its horror and neurosis-producing connotations, then a counter-campaign of education should be started now aimed at all individuals who will be in positions of responsibility. The knowledge of the true facts as to dangers and effective means of protection will lead to a vast strengthening of our morale. The true facts about chemical warfare are far less frightening than the unfounded fear that most individuals associate with chemical warfare." (Rennie & Small, Review Series, Vol. 1, No. 1, Macy Foundation, '43.)

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The Inhalation of High Concentrations of Carbon Monoxide: Although considerable data are available concerning the uptake in man of low concentrations of carbon monoxide for periods of exposure of one or more hours, it is only recently that the relationship between high concentrations of CO inhaled for short periods and blood saturation has been investigated.

In tests conducted at the Naval Medical Research Institute, men breathed concentrations of CO up to 20 parts per 10,000 for periods of 20 minutes during rest and exercise.

As a result of these studies it was found that about half of the CO inhaled during each respiration was absorbed by the blood; hence, up to a COHb concentration of at least 35 per cent the absorption of CO follows a straight line with respect to time. That is, with a given atmospheric CO, carbon monoxide hemoglobin concentration in the blood stream rises in direct proportion to exposure time.

Thus the essential factors in the absorption of CO are concentration in air and minute volume of breathing. For exactness a third factor, the blood volume, is to be considered.

By application of these factors it is possible to state the length of time that a given concentration of CO can be breathed. If, for example, the COHb concentration is limited to 20 per cent, or a level not usually associated with symptoms, then an individual taking moderate exercise, i.e., minute volume of breathing 18 liters, can safely breathe

	20 parts/10,000 of CO for 11 minutes
or 15 "	" " " " " 15 "
or 10 "	" " " " " 22 "

If the breathing volume is reduced to one-half of the exercise output, i.e., 9 liters or an average value for the resting individual, then the time values in the above table can be doubled and the carbon monoxide hemoglobin (COHb) will not then exceed 20 per cent. A formula expressing the relations given above may be written:

$$\text{time of exposure} = \frac{\text{Blood volume} \times \text{per cent COHb} - 20,700}{23.85 (\text{minute volume} \times \text{parts CO})}$$

when time of exposure is expressed in minutes, the blood volume in cubic centimeters and the parts CO in parts per 10,000.

If the factor of blood volume is omitted, a simplified form of the equation for use as a gross approximation can be expressed in the following manner:

$$\text{time of exposure} = 200 \times \frac{\text{Per cent COHb}}{\text{Minute volume} \times \text{parts CO.}}$$

(A.R.B. - N.P.)

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Carbon Monoxide and Naval Aviation: The possibility of carbon monoxide poisoning should be borne in mind whenever personnel have been exposed to the products of combustion in enclosed or semi-enclosed spaces. Both rescuers and persons rescued from fires in such spaces or from burning aircraft may have dangerous concentrations of carbon monoxide in their blood.

Diagnosis of carbon monoxide poisoning is difficult unless there is a history of exposure or means are available to analyze a sample of the patient's

blood. At blood saturations above 20 per cent, headache usually develops, and there is shortness of breath with moderate exertion. Between 30 and 40 per cent there are weakness, dizziness, dimming of vision and occasionally nausea and vomiting. Above 50 per cent saturation there is marked mental impairment and danger of collapse with respiratory failure.

Carbon Monoxide in Aircraft Carriers: Tests have recently been made of the air in closed spaces in two types of aircraft carriers (ACV-11 and CVL-25) during and after warming up motors on the hangar deck. When this was done under modified blackout conditions it was found that the concentration of carbon monoxide could be kept at the lowest level by lowering the forward and after elevators three feet, facing the planes forward, and then warming up the engines for the standard ten-minute period. When this procedure was followed, personnel exposed on the hangar deck 15 minutes developed blood saturations of less than 20 per cent carbon monoxide. This level is insufficient to produce symptoms at sea level in most persons but would markedly impair altitude tolerance. Blood samples from personnel in the berthing spaces and ready rooms did not exceed 7.3 per cent, a level which is occasionally found in smokers.

It has been determined that there are no residual or cumulative effects from repeated exposures to carbon monoxide sufficient to produce blood saturations up to 35 per cent if the subjects have time to eliminate the gas between such exposures. Breathing air it requires about three hours to reduce blood saturation from 35 to 20 per cent and a further four and one-half hours to bring it down to 10 per cent. If pure oxygen is breathed, elimination is much more rapid and clearance from 35 to 10 per cent occurs in about one hour.

These data lead to the conclusion that warming up motors on hangar decks under the conditions described is safe if flying personnel are not exposed and if a period of eight hours is allowed ground crews between these exposures. It must be recognized, however, that this procedure must be carefully controlled because the margin of safety is not high. If, for example, ventilation of the deck were less effective or if exposure times were increased dangerous blood saturation with this gas might readily occur.

Carbon Monoxide in Aircraft: It has frequently been suggested that carbon monoxide in aircraft cabins may be a cause of impaired efficiency, reduced altitude tolerance, and occasional crashes. Repeated tests of the cabin air of Army and Navy service type aircraft during flight indicate that hazardous concentrations of carbon monoxide do not occur under normal operating conditions. Blood samples of personnel after flights have been found to contain no more carbon monoxide than is occasionally found in smokers (7 per cent saturation). Flying personnel and maintenance crews should, however, be aware of the hazard which can arise from leaking exhaust lines, cabin heaters or auxiliary power units if these are defective, improperly serviced, or damaged during flight. Puncture of such equipment or of cabins during combat operations may result in toxic concentrations of this gas. Flying personnel should be aware of the necessity of using oxygen equipment whenever such a condition is suspected. (R.B.B.)

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The Production of Chronic Hypertension in Dogs by Progressive Ligation of Arteries Supplying the Head: "Chronic hypertension has been produced in dogs by ligation, in series, of the arteries supplying the head. Removal or manipulation in situ of the carotid sinuses alone has no prolonged effect on the blood pressure of dogs." (Fishback et al, J. Lab. & Clin. Med., July '43.)

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Giemsa Stain: The Naval Medical Supply Depot has placed Giemsa stain on the Supply Table. Each 50 c.c. bottle of stain is packaged with a bottle of dry buffer salts and directions for use in staining both fixed thin blood films and unfixed thick blood drop preparations.

There has been considerable difficulty in the past in obtaining a Giemsa stain which would give constant results from the various lots of stain produced. The Naval Medical School has been working on the production of a more satisfactory Giemsa in conjunction with Senior Surgeon R.D. Lillie, U.S.P.H.S. His method of making "A Giemsa Stain of Quite Constant Composition and Performance from Eosin and Methylene Blue" is described in Public Health Reports, March 25, 1943, and this is the method employed by the Naval Medical School in making this stain which is now available from the Medical Supply Depot.

This item will be listed in the Supply Catalog as: No. S4-0156 STAIN, GIEMSA 50-cc bot (with 25-cc buffer salts). (P.W.W.)

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The Significance of the Gross Character of the Sputum in the Prognosis of Pneumococcic Pneumonia: "The gross character of rusty sputum in 651 cases of pneumococcic pneumonia was correlated with standard prognostic criteria and the final outcome of the disease. As a result of observations made at necropsy, those patients who produced small amounts of a viscid rusty sputum were classified as 'dry' lungs, whereas those who raised large quantities of watery to gelatinous, homogeneously rusty sputum were classified as 'wet' lungs. The pneumonia in the former group was relatively mild, while the disease in the latter group was considerably more severe, as shown by fatality rates of 6 per cent and 23 per cent, respectively, as well as by significant differences in the number of pneumococci in the sputum, the extent of consolidation, and the incidence of bacteremia and leukopenia. It was concluded that the gross character of the sputum was of distinct value in the prognosis of pneumococcic pneumonia. The significance of the observations with reference to the pathology of the pulmonary lesions is discussed." (Frisch et al, J. Lab. & Clin. Med., July '43.)

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Burn Shock: "In the United States 6,000 persons die every year from burns, and of these 60 to 75 per cent die of burn shock." (Harkins, J. Mich. M. Soc., Apr. '42, quoted in War Med., July '43.)

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"Notes on Tropical and Exotic Diseases of Naval Importance" has been re-written and is now being printed. As soon as possible, copies will be forwarded to all Navy medical officers. Attention is especially invited to the section on malaria, since there are important changes and additions. Combined treatment with quinine and atabrine has been discontinued. The discussion of the use of atabrine alone is modified. The use of plasmochin is no longer recommended; the anticipated reduction in relapses has not been experienced and unfavorable reports of plasmochin toxicity have been received. The discussion of malaria control has been expanded. Suppressive treatment with atabrine is recommended in emergency conditions; the present maintenance schedule is 0.05 Gm. daily and 0.1 Gm. on Sundays, a weekly total of 0.4 Gm. When necessary, this may be increased to 0.1 Gm. daily for six days each week.

There are also important changes in the discussion of filariasis. There is a new section on rat control and identification. Maps showing the world distribution of important diseases have been included. It is expected that this information will be of considerable assistance to personnel in the field. Upon receipt of the new copy, officers are advised to discard the notes issued in November 1942. (P.W.W.)

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Hypoprothrombinemia After Salicylate Administration: "The results indicate clearly that therapeutic doses of salicylates can lead to a marked prolongation of the prothrombin time of the blood. The evaluation of the significance of such changes awaits further study. It is conceivable that the hypoprothrombinemia reflects a certain degree of liver damage. A question also arises whether the hemorrhagic tendency occasionally present in rheumatic fever may complicate salicylate therapy or sometimes may be a concomitant effect of such therapy. The possibility of counteracting the effect of salicylates on prothrombin by the administration of Vitamin K should be investigated." (Proc. Soc. Exper. Biol. & Med., May '43.)

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The Tocopherols (Vitamin E) in the Treatment of Primary Fibrositis: Steinberg reports a series of 145 cases of primary fibrositis who were treated with wheat germ oil or alpha and gamma tocopherol administered by oral or intramuscular routes. Wheat germ oil was given by mouth in doses of 2 to 8 c.c. daily. An average oral or intramuscular dose of the purified tocopherols was 200 mg. each week. Marked improvement was reported in 143 of these cases. Cases of primary fibrositis were selected upon the following criteria: "The clinical history is most important. Given a healthy appearing individual whose muscles stiffen ('jell') on the least exposure to cold, who often must lose time from work because of generalized stiffness and soreness, whose blood picture is normal and who shows on careful examination of the skeletal structures, such telltale evidences as fibrous nodules, thickenings in various planes of aponeuroses and tendon contractures without known cause, a presumptive diagnosis of primary fibrositis should be made. If, in addition, the urinary creatine excretion is increased and this creatinuria responds favorably to

tocopherol therapy, then a positive diagnosis can be made. In other words, a diagnosis by exclusion is most important."

Creatine excretion in some of the cases dropped from 750 mg. to 95 mg. daily. Daily excretion of creatine of ten normal controls varied from 86 to 140 mg.

Hickman, in commenting on Steinberg's article, recalled the history of the discovery of Vitamin E by Evans twenty years ago; the fact that Vitamin E deficiency in animals produces sterility cured by adequate dosage of Vitamin E and that human cases of sterility have not been found to respond as was hoped indicated that in a majority of instances, sterility was not based upon deficiency of Vitamin E. Vitamin E, he pointed out, occurs in nearly all foods and especially in fats and tissues near the seed or reproducing organs. Vitamin E is the usual natural preservative of fats which quickly go rancid unless they contain one to ten parts in 10,000 of the vitamin. He suggested that the vitamin preserves not only fat but body tissues in contact with fat and the oil-soluble vitamins in the fat and the tissue. In support of the latter he cites Moore's observation that the quantity of Vitamin A stored in the liver of the rat is proportional to the amount of Vitamin E in the diet. (Proc. Am. Rheumatism Assoc. published in Ann. Int. Med., July '43.)

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Diluted Blood From Universal Donors May Be Safer: Bucher advised that blood from a universal donor be diluted 50 per cent with physiologic solution of sodium chloride before it is transfused into a person of another group. The rapidity of agglutination is reduced by half in the half-diluted serum, and thus the infused blood becomes mixed in the right side of the heart, before the agglutination of the recipient's erythrocytes can take place.

If half-diluted "O" blood is used for a patient with blood of another group, transfusion can be done rapidly without danger. This applies particularly when there has been acute loss of blood and no blood of the patient's group is available. Whole blood of his own group is, however, to be preferred. (Schweiz. med. Wchnschr., Mar. '42.)

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This is one of three known ways to solve the problem of "dangerous universal donor." The other two are to demonstrate the absence of an excessively high titer of agglutinins or to add Witebsky's specific A and B substances to the blood. (L.R.N.)

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Filtration of Preserved Whole Blood Important: Bucher reports that in the Swiss Army preserved whole blood is used. He emphasizes that the filtration of stored whole blood is necessary just prior to transfusion. The study disclosed three different types of aggregates removable by filtration: (1) Small

agglutinated accumulations of erythrocytes (autoiso-agglutination) about the size of a pinhead formed chiefly at the base of the ampulla and disintegrated rapidly. (2) Red blood coagula, occasionally as large as a filbert, were encountered with varying frequency. (3) All specimens showed fibrin coagula, some of them in the form of short threads and others in the form of grayish-white crumbs. These developed almost exclusively in the leukocyte layer. (Schweiz. med. Wchnschr., Feb. '42.)

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These observations are confirmatory of many in this country. However, it has been recently demonstrated that the red cells in blood over a week to ten days old do not survive long enough in the recipient's circulation to be of much therapeutic benefit. When stored blood is used an adequate filter of large size must be provided in the intravenous set or the blood must be filtered through four layers of gauze just prior to use. (L.R.N.)

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Technic of Wound Excision: The author advises against the use of a tourniquet, except when hemorrhage is severe. Skin should be removed with caution and never sacrificed in facial injuries. Wide excision is desirable. Intermuscular spaces must be opened up and blood and blood-clot removed, since these constitute an ideal pabulum for bacterial growth. Completely detached fragments of bone should also be removed since they act as foreign bodies and may aggravate any infection. Partially detached fragments of bone should be carefully removed with bone-cutting forceps.

Removal of retained foreign bodies in the wound track is imperative but it is often wiser not to attempt the removal of multiple minute fragments buried deeply in the tissues. An X-ray film of the injured part at the operation is a valuable aid to the surgeon.

In wound excision the preservation of major nerves, blood vessels and muscles is of utmost importance. Adequate exposure will permit thorough cleansing of the tissues.

Sulfonamide powders applied locally should be sterilized and applied from sterile containers. The powder should be sprinkled over the exposed surface after excision has been performed, but not in the neighborhood of important nerves. To prevent caking, the powder should be gently massaged into the tissues. No more than 15 Gm. of sulfanilamide or 10 Gm. of sulfathiazole is required and the quantities may be proportionately reduced when a sulfonamide has been given by mouth.

Primary suture of battle wounds is generally undesirable. Vaseline gauze must not be tightly packed; the blood supply to the structures bounding the wound may be jeopardized by neglect of this instruction. Closure of a wound after a few days (delayed primary suture) must be considered carefully before it is attempted.

Since the presence of a sulfonamide in a wound tends to increase serous discharge and capillary oozing, tight suturing and an excess of local sulfonamide must be avoided; in open wounds with adequate drainage larger quantities are permissible. The presence of sulfonamide is no contraindication to the application of plaster-of-Paris. (Surgeon Rear Admiral G. Gordon-Taylor, Bull. War Med., London, June '43.)

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Gall Bladder Visualization With Priodax: Observation made in 50 routine cases of cholecystography confirmed the report that a single 3 Gm. dose of Priodax, beta-(4-hydroxy-3, 5-diiodophenyl)-alpha-phenyl-propionic acid, given orally by the usual technic produced gall bladder visualization equal or superior to that usually obtained from other contrast materials. Freedom from nausea, vomiting, diarrhea or other indication of gastrointestinal irritation was an outstanding feature of these examinations. (Am. J. Digest. Dis., June '43.)

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A limited trial of the above dosage at the Naval Hospital, Bethesda, Md. has given good radiographic results with no complaints from patients. (C.F.B.)

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The Verification Test in the Serology of Syphilis: In this article the author discusses the present status of the verification test for syphilis. He points out that modern routine serological tests for syphilis including both the complement fixation and precipitation tests do not distinguish in any way between specific and nonspecific reactions. That is, to the technician, false positives which occasionally are observed to occur temporarily in other diseases or which may have other nonluetic background appear no different than do those obtained with syphilitic sera.

"Studies carried out in this (Kahn) laboratory on differential characteristics of nonspecific and specific serologic reactions led to the observation that these reactions have different temperature and electrolyte requirements for optimal reactivity. This observation, in turn, led to the development of several procedures capable of determining whether certain serodiagnostic reactions possess characteristics of specific or nonspecific reactions, or of both types of reactions."

These procedures (termed verification test) separate and distinguish, i.e., they "type" serodiagnostic reactions on the basis of their specificity and are of practical value, especially when applied to the differentiation of sero-positive cases that are free from clinical indications of syphilis. When applying the verification test to such cases, nonluetic type of reaction may be looked upon as being corroborated by clinical opinion, and the diagnosis of "false positive" can then be made with reasonable certainty. (J. Lab. & Clin. Med., July '43.)

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Salmonella Infections: We ordinarily think of the Salmonellae as those organisms making up the group which cause most of the cases of what we term food poisoning or food infection. Bernstein points out that Salmonella bacilli may produce three quite different clinical pictures in the human, i.e., Salmonella fever, Salmonella septicemia and Salmonella gastroenteritis.

In Salmonella fever, malaise and fever are the dominating symptoms and usually last from one to three weeks; leukopenia occurs in some cases and the disappearance of eosinophiles is common; blood cultures are often positive early in the disease; Salmonella organisms are occasionally found both in the urine and in the sputum; bronchitis and bronchopneumonia are not infrequent complications.

In Salmonella septicemia the history may reveal an attack of diarrhea preceding the onset by a few weeks; there is a high remittent fever and a positive blood culture.

In Salmonella gastroenteritis, the incubation period is 8 to 24 hours or more between the consumption of the contaminated food and the first symptoms. Vomiting is usually the first symptom; diarrhea is less severe than in dysentery and not characterized by bloody stools or tenesmus. The fever usually subsides after three or four days and recovery is complete in less than a week as a rule. Sulfaguanidine is useful in Salmonella infections, particularly infections with S. cholerae suis and S. paratyphoid A.

Smoked fish has been found responsible for several outbreaks; fish have been shown to be contaminated by sewage. There is some evidence that rat excreta have contaminated food. The hands of human carriers are an important source from which food material may become contaminated. Salmonellae have been found in Chinese egg preparations. Salmonellae multiply rapidly in the cream filling of pastries but do not survive in pure fruit fillings of pies. Salmonella bacilli are resistant to low temperatures and as a result outbreaks of infection related to ice cream have repeatedly occurred. (State of the Salmonella Problem, J. Immunol., June '43.)

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Sulfaguanidine and sulfasuccidine are effective in inhibiting growth of sulfonamide-susceptible bacteria in the intestinal tract. They are poorly absorbed and, unless given in over dosage, do not produce significant blood levels. Sulfathiazole and sulfadiazine are probably equally effective in enteritis and may be the drugs of choice in view of the evidence presented above that the Salmonellae often show invasive tendencies.

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The American Society of Tropical Medicine Invites Essayists to Submit Papers: Annually, it has been the custom of the Bureau of Medicine and Surgery to make announcement of the meeting of the American Society of Tropical Medicine and of the plans for the submission of papers, in the Naval Medical Bulletin. This year, as the time is short, the announcement is being transmitted via the Bumed News Letter.

The Society will hold its annual meeting in conjunction with the meeting of the Southern Medical Association in Cincinnati, Ohio, November 16-18.

The Society invites essayists to participate in the regular scientific sessions and requests that they include in their application to the secretary for a place on the program at the annual meeting the information indicated below.

Please return before September 1, 1943, to Dr. Joseph S. D'Antoni, Secretary-Treasurer, Department of Tropical Medicine, Tulane University School of Medicine, 1430 Tulane Avenue, New Orleans, Louisiana, U.S.A.

APPLICATION FOR PLACE ON PROGRAM AT 39th ANNUAL MEETING, Cincinnati, Ohio, November 16-18, 1943, should give the following information: name of author; academic position; address; exact title of paper; to be read in person or by title; maximum time required for presentation; will lantern slides be used; will motion pictures be shown; do you wish a motion picture projector provided, and if so what size; abstract of paper not to exceed 250 words to be attached to application for place on program.

* * * * *

"A total of 236 patients with colonic symptoms have been examined to establish the etiologic diagnosis. The more thorough the examination, the smaller became the unsatisfactory group of undiagnosed cases.

"In 68 patients *Endamoeba histolytica* was found as the causative organism; from 21 patients a *Shigella* organism was recovered. In addition to these pathogens, undulant fever, lymphopathia venereum, and carcinoma were discovered in a significant number." (D'Antoni, "Amebic and Bacillary Colitis in the New Orleans Area," *Am. J. Trop. Med.*, Mar. '43.)

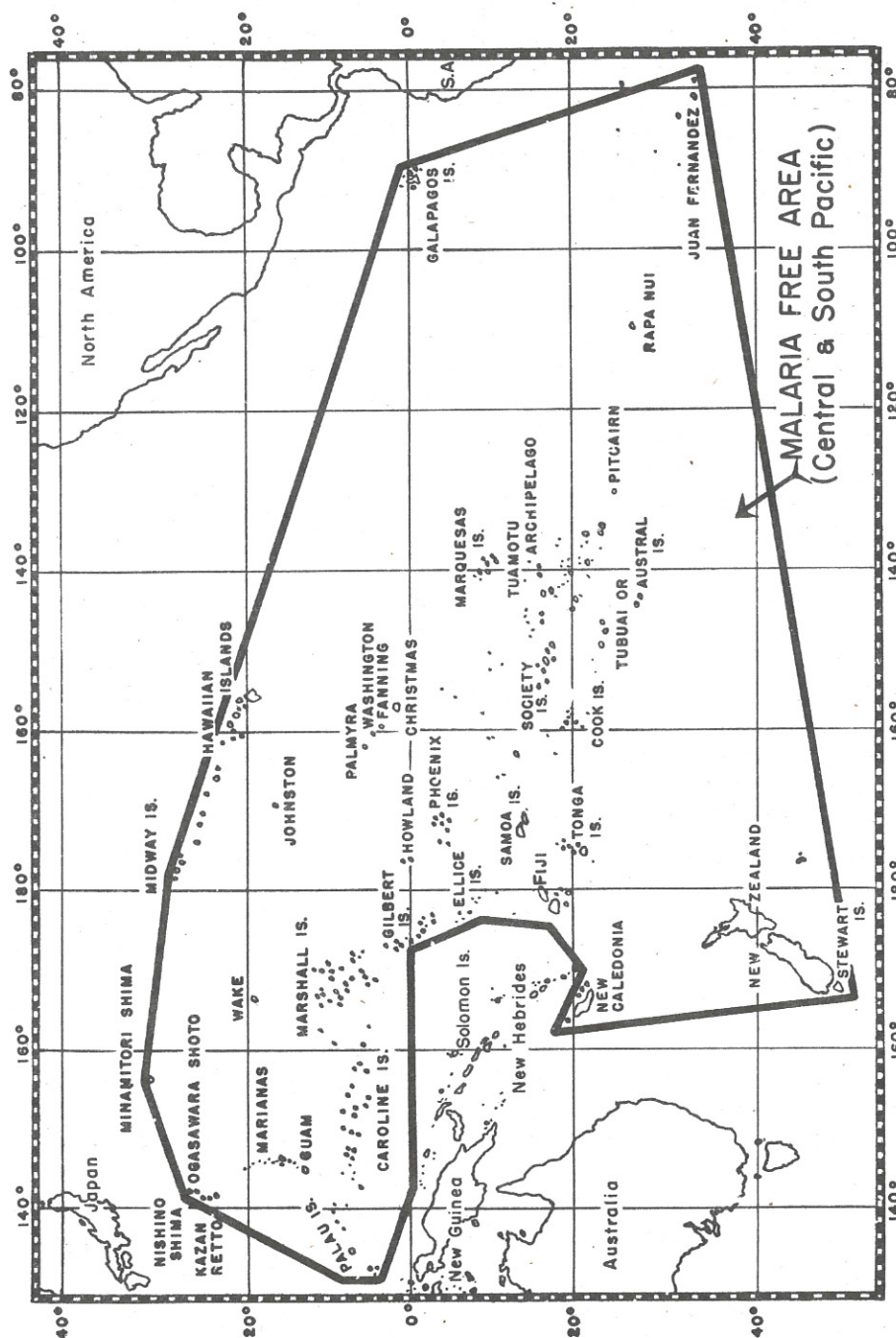
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When May Deep Q₃ Electrocardiograms Be Considered Abnormal? When the Q₃ electrocardiograms contain abnormal T waves, it may be concluded that the deep Q₃ is due to organic heart disease; however, deep Q₃ waves frequently occur without accompanying abnormal T waves. In instances where the deep Q₃ is the only abnormality, a decision as to its significance is often impossible though the position of the heart as determined by X-ray and the effect of deep inspiration may be of presumptive assistance.

The authors analyze a series of 102 electrocardiograms with significantly deep Q₃ waves and set up criteria involving all four factors of the tracings to apply to those records in which the deep Q₃ was the only abnormality. They conclude that if two or more of the following criteria are present, a deep Q₃ may be considered indicative of pathology: (1) Q₃ of 75% or more of the highest R wave; (2) Q₂ of 1 mm. or more; (3) T₁ of 3 mm. or more; (4) T₄ of 4 mm. or more. If less than two of the above criteria accompany a deep Q₃ the authors agree that they are still in a quandary. (Mazer & Reisinger, *Am. J. M. Sc.*, June '43.)

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Some confusion apparently has arisen due to the fact that the original "malaria-free area" map printed as an enclosure with the Bumed form letter of 21 January 1943, on the subject of "Disinsectization of Surface Craft," carried the words "malaria-free area" at the bottom of the map without indicating clearly that the free area was within the heavy lines and that it applied specifically to the Central and South Pacific area. The chart, as amended, is therefore being reprinted in this issue of the Bumed News Letter.



SPARE PARTS (Reprinted from Medical Supply News Letter, #6-43, N.M.S.D., Brooklyn, N.Y.): To the end that much strategic material may be conserved without loss of efficiency by judicious replacement of worn, lost or broken parts, the attention of all Medical Department officers (and Hospital Corpsmen on independent duty) is invited to the following list of accessory items (spare parts) now in the Supply Catalog. Included in this list are numerous expendable items.

CLASS 2 - ACCESSORY ITEMS FOR OTHER SUPPLY CATALOG ITEMS

- 2-025 - Atomizer, special (for use with air compressor (6-090))
- 2-140 - Battery, dry (for flashlight, hand (6-095) & diagnostic set (3-035))
- 2-195 - Bulb, rubber (for atomizers (2-020) & infusion apparatus (2-480))
- 2-370 - Crutches, rubber tip (for 2-360)
- 2-385 - Cylinders, glass, graduated to 300cc (for injection outfit (2-485))
- 2-470 - Hanger, for cylinder (for injection outfit (2-485))
- 2-500 - Lamp, antral (Cameron) (for diagnostic set (3-035))
- 2-505 - Lamp, bulb, plain (for case, diagnostic, electric (3-035))
- 2-510 - Lamp, cystoscope, concave sheath (sample lamp or instrument required to fit) (for 3-165)
- 2-515 - Lamp, cystoscope, convex sheath (cartridge type lamp) (for 3-165)
- 2-520 - Lamp, urethroscope (for 3-930, 3-935, 3-940, and 3-945)
- 2-535 - Consists of the following components:
 - 2-605 - Needle, lock type, length - 1", 24 gage (for local anesthesia outfit (2-535))
 - 2-610 - Needle, lock type, length - 3", 20 gage (for local anesthesia outfit (2-535))
 - 2-615 - Needle, lock type, length - 1½", 22 gage, security stop (for local anesthesia outfit (2-535))
 - 2-620 - Needle, lock type, length - 2", 22 gage, security stop (for local anesthesia outfit (2-535))
 - 2-625 - Needle, lock type, length - 2½", 22 gage, security stop (for local anesthesia outfit (2-535))
 - 2-630 - Needle, lock type, length - 3", 22 gage, security stop (for local anesthesia outfit (2-535))
 - 2-635 - Needle, lock type, length - 4", 22 gage, security stop (for local anesthesia outfit (2-535))
 - 2-640 - Needle, lock type, tonsil, curved, length - ½", 23 gage (for local anesthesia outfit (2-535))
 - 2-645 - Needle, lock type, tonsil, straight, length - ¾", 23 gage (for local anesthesia outfit (2-535))
 - 2-1255 - Syringe, needle, lock type, glass, 3 cc (for local anesthesia outfit (2-535))
 - 2-1260 - Syringe, needle, lock type, glass 10 cc (for local anesthesia outfit (2-535))
- 2-850 - Reservoir, glass, 700 cc (for infusion apparatus (2-480))
- 2-890 - Snare, tonsil and nasal (Tyding), canula for, 2-3/8" (for 3-770)
- 2-895 - Snare, tonsil and nasal (Tyding), canula for, 3½" (for 3-770)
- 2-905 - Sphygmomanometer, bulb, air release for (3-840 & 3-845)
- 2-910 - Sphygmomanometer, cloth arm band for (3-840 & 3-845)
- 2-915 - Sphygmomanometer, rubber insert for (3-840 & 3-845)

- 2-945 - Splint, attachment (for arm and leg splints) (Pearson) (for 2-920, 2-925, 2-935, 2-940)
- 2-980 - Stethoscope, diaphragm for (for 3-860)
- 2-985 - Stethoscope, ear tip for (for 3-860)
- 2-1355 - Tubing, rubber, No. 12F, 48" long (for tube, duodenal, Rehfuess (3-920))
- 2-1370 - Vision Test Set, color sense (pseudo-isochromatic plates (for 2-1365))
- 2-1375 - Vision Test Set, letters, etc. (for 2-1365)
- 2-1380 - Vision Test Set, astigmatic dial (Green) (for 2-1375)
- 2-1385 - Vision Test Set, distance letters (Grow) (for 2-1375)
- 2-1390 - Vision Test Set, black background (Snellen) (for 2-1375)
- 2-1393 - Vision Test Set, near vision (for 2-1375)
- 2-1395 - Vision Test Set, white background (Snellen) (for 2-1375)

CLASS S2 - ACCESSORY ITEMS FOR OTHER SUPPLY CATALOG ITEMS

- S2-010 - Alcohol, solidified (for S2-1992) 2-5/8 oz. pkg.
- S2-015 - Alcohol, solidified (for S2-1992) 7 oz. pkg.
- S2-080 - Belt, flat, leather, 43" circum. (for S2-080 & S2-085)
- S2-100 - Belt, V type, rubber, 36" circum. (for S2-080 & S2-085)
- S2-120 - Belt, V type, rubber, 40" circum. (for Pioneer air compressors)
- S2-441 - Box, fiber, perforated, flat fold, size 2½" x 4-1/8" x 7¼" (for S2-1057)
- S2-500 - Canopy, pliofilm (for S6-1180 - Tent, oxygen)
- S2-520 - Case, pins, scissors, and forceps, empty (for 2-200)
- S2-845 - Cotton, pads, 1" x 2" (50 in pkg.) (for S2-1058)
- S2-866 - Cover, canvas (replacement part for 14-425)
- S2-867 - Cover, canvas (replacement part for 6-145)
- S2-921 - Drill, bone, twist, 3/32" drain (for S3-380)
- S2-922 - Drill, bone, twist, 1/8" drain (for S3-830)
- S2-923 - Drill, bone, twist, 5/32" drain (for S3-380)
- S2-924 - Drill, bone, wire, 0.062" drain (for S3-380)
- S2-925 - Drill, bone, wire, 0.045" drain (for S3-380)
- S2-926 - Drill, bone, wire, 0.035" drain (for S3-380)
- S2-1130 - Lamp bulb, clear, 2.25 to 2.50 volts, T3 bulb (for use with Reid streak retinoscope (S3-1120))
- S2-1140 - Lamp bulb, 7 watts, 110 volts, C-7 white bulb, C7-A filament, candelabra base (for use with phorometer spotlight (S2-1980))
- S2-1145 - Lamp bulb, 10 watt, S11, P-10 intermediate screw base (for use in Telebinoculars (S3-1357) & (S3-1358)) 120 volts
- S2-1150 - Lamp bulb, electric, 40 watt, 110 volt (for illuminator, magnifying (5-210))
- S2-1160 - Lamp bulb, plain, 60 watts, 110 volts, carbon filament, T-10 bulb, medium screw base (for use in Bakers, electric (S6-060) & (S6-080))
- S2-1170 - Lamp bulb, electric, 100 watt, 120 volt, p-25 medium screw base, T-14-C-13 filament (for Spotlight, surgical, portable (S6-1000))
- S2-1460 - Pouch, hospital corps, large, empty (for 3-555)
- S2-1480 - Pouch, hospital corps, small, empty (for 3-560)
- S2-1985 - Stereographs, 5 in series (for S3-1357 & S3-1358)
- S2-1986 - Stereograph, No. 1, V-OD Test, visual acuity, right eye (for S3-1357 & S3-1358)
- S2-1987 - Stereograph, No. 2, V-OS Test, visual acuity, left eye (for S3-1357 & S3-1358)

- S2-1988 - Stereograph, No. 3, MB Lat. Test, lateral M.B. (for S3-1357 & S3-1358)
- S2-1989 - Stereograph, No. 4, MB V Test, vertical M.B. (for S3-1357 & S3-1358)
- S2-1990 - Stereograph, No. 5, Ster V, Stereoscopic vision (for S3-1357 & S3-1358)
- S2-2000 - Stylet, flexible (for Robinson catheters (S2-600 to S2-780, incl.))

CLASSES 4 and S4 - LIST OF REPLACEMENT PARTS (Expendable)

- 4-620 to 4-645 - Labels for Navy standard shelf bottles
- 4-975 - Sleeves, complete with mounting frame (for Dental developing cabinet)
- 4-1080 - Tubing, pressure, silk covered, complete with fittings (for Air Compressor, tankless type).
- 4-1085 - Tubing, rubber, 1/8" diameter, 3/32" wall, 5' length (for aspirator and injector, Potain)
- 4-1095 - Tubing, rubber, 3/16" inside diameter, 3/32" wall, 3' length (for stethoscope)
- 4-1100 - Tubing, rubber, 3/16" diameter, 3/64" wall, 6' length (for Air Compressor, tankless type)
- 4-1120 - Tubing, rubber, with shut-off clamp (for embalming outfit)
- 4-1145 - Wick (for lamp, alcohol, metal)
- S4-019 - Bio-Colorimeter, cup for (Klett)
- S4-029 - Burner, Bunsen
- S4-143 - Element, infra-red therapy lamp, 110 volts, 600 watts, AC-DC, for Weldon lamp
- S4-144 - Element, infra-red therapy lamp, 220 volts, 600 watts, AC-DC, for Weldon lamp
- S4-145 - Element, infra-red therapy lamp, 110 volts, 475 watts, Burdick Catalog No. HZD-35, for use in Burdick Models Z1, Z10, Z15, and Z50 lamps
- S4-146 - Element, infra-red therapy lamp, 110 volts, 600 watts, Burdick Catalog No. SZS-35, for use in Burdick Model Z12 only
- S4-147 - Element, infra-red therapy lamp, 110 volts, 450 watts, for use in COSMO, MANHATTAN, PROMETHEUS, TOWERCRAFT lamps
- S4-149 - Element, ultra-violet lamp, 110 volts, AC, hot quartz type, for Burdick Navy type (S6-610), QA450 and New Type Solarium lamps
- S4-158 - Illuminator, X-Ray film, front glass for (for 5-215) & (S5-350)
- S4-159 - Illuminator, Dental X-Ray films, opaque glass for (for 5-210)

BUREAU OF MEDICINE AND SURGERY

F-OHR

JJ57/A21(074)

28 Jun 1943

To: Headquarters U. S. Marine Corps.
Medical Officers of all Marine Corps Activities.
Medical Officers in Command, Naval Medical Supply Depots.

Subj: First-Aid Kits, Auxiliary.

1. This Bureau has been advised that the U. S. Marine Corps is requesting a quantity of Army Individual Medical Jungle Kits, M-1943 (Army Stock No. 97109), sufficient to equip personnel in the field. The kits are of the pouch type with an apron flap but devoid of contents. They have a capacity approximating 36 cubic inches and are provided with a pocket and six small compartments for inserts. Two of these compartments are particularly adapted for holding plastic vials (Stock No. 4-1135) which vials may be filled with tablet triturations or other medicaments as desired. Other compartments, as well as the pocket, may be filled with first-aid supplies deemed appropriate by the senior medical officer. The following items are suggested:

<u>Stock No.</u>	<u>ITEM</u>	<u>Quantity</u>
1-550	OINTMENT, MERCUROUS CHLORIDE, MILD, compound, tube	qs
1-1085	SODIUM CHLORIDE, 0.648 gm	qs
1-1185	TINCTURE OF IODINE, MILD, 10cc applicator vial	qs
4-1135	VIAL, empty, (Plastic)	2 ea.
S1-4020	ATABRINE, 0.1 gm (100 in bottle)	1 ea.
S2-919	DRESSING, gauze and adhesive plaster (Band Aid)	qs
S13-450	INSECT REPELLENT, (liquid) 2 oz bottle	2 ea.
M1-125	HALAZONE (furnished by Marine Corps Quartermaster)	qs

2. Early distribution of subject kits is contemplated. Accordingly, medical officers are advised to requisition and stock required supplies and be prepared to fill and/or refill the kits as may be required.

L. SHELDON, Jr.
Rear Admiral (MC), USN
Acting Chief of Bureau.

Distribution:
8c (Naval Medical Supply Depots) and
13

BUREAU OF MEDICINE AND SURGERY

H:DL

27 Jul 1943

To: COs, All Ships and Stations.

Subj: Dental Technologists Prosthetic.

1. To adequately staff the prosthetic dental units now under construction at naval training stations and Marine Corps bases, it is mandatory that approximately five hundred (500) hospital corpsmen be placed under instructions in prosthetic technique immediately.
2. The Bureau of Medicine and Surgery urgently requests addressees to submit the names of all hospital corpsmen now qualified as dental technologists general, who are recommended by the senior dental officer, for this type of instruction. In addition thereto, BuM&S also requests the names of all hospital corpsmen who prior to enlistment in the Navy have had experience in dental prosthetic laboratories.
3. In view of this urgency, it is requested that names be forwarded to BuM&S via air mail.

ROSS T. McINTIRE
Rear Admiral, (MC), USN
Chief of Bureau.

BUREAU OF MEDICINE AND SURGERY,
NAVY DEPARTMENT,
WASHINGTON, D.C.

BUREAU OF MEDICINE AND SURGERY

F-OHR, F34-5(052-37)
24 July 1943

To: All Ships and Stations.

Subj: Gas Casualties--Prevention and Treatment.

Ref: (a) BuM&S ltr. F34-5(052-37) P-4: KC, of 21 May 1943; N.D. Bul.
of 1 June 1943, R-1049.
(b) BuM&S 1st endorsement JJ57/KK(062), dated 18 June 1943, on
USMC ltr. 215-4 QM 22144, dated 14 June 1943.

1. Paragraph 3 of reference (a) recommends that "Each person who may be subjected to a vesicant gas attack should carry one tube of S-461 Ointment and one tube of BAL Ointment with his gas mask for use in prevention or decontamination procedures." In order that these highly essential ointments may be available for issue concurrently with the issue of gas masks, it is directed that medical officers in areas which may be subjected to gas attacks take necessary steps to obtain -

Sl-3375 OINTMENT, Protective S-461, 3 oz. tube
Sl-3361 OINTMENT, BAL $\frac{1}{2}$ oz. tube

These items are being made available at all naval medical supply depots and all extra-continental naval medical supply storehouses as rapidly as manufacture permits. Reference (b) directs that certain Marine Corps depots be supplied with S-461 Ointment. BAL Ointment is also being similarly supplied, tube for tube. These items are ostensibly outfit allowances for activated Marine Corps units. However, medical officers of these units should assure themselves that the personnel thereof is appropriately supplied.

2. The Bureau of Ships has advised this Bureau that space will be made available for these items in future gas-mask bag specifications.

L. SHELDON, Jr.
Rear Admiral (MC), USN
Acting Chief of Bureau.